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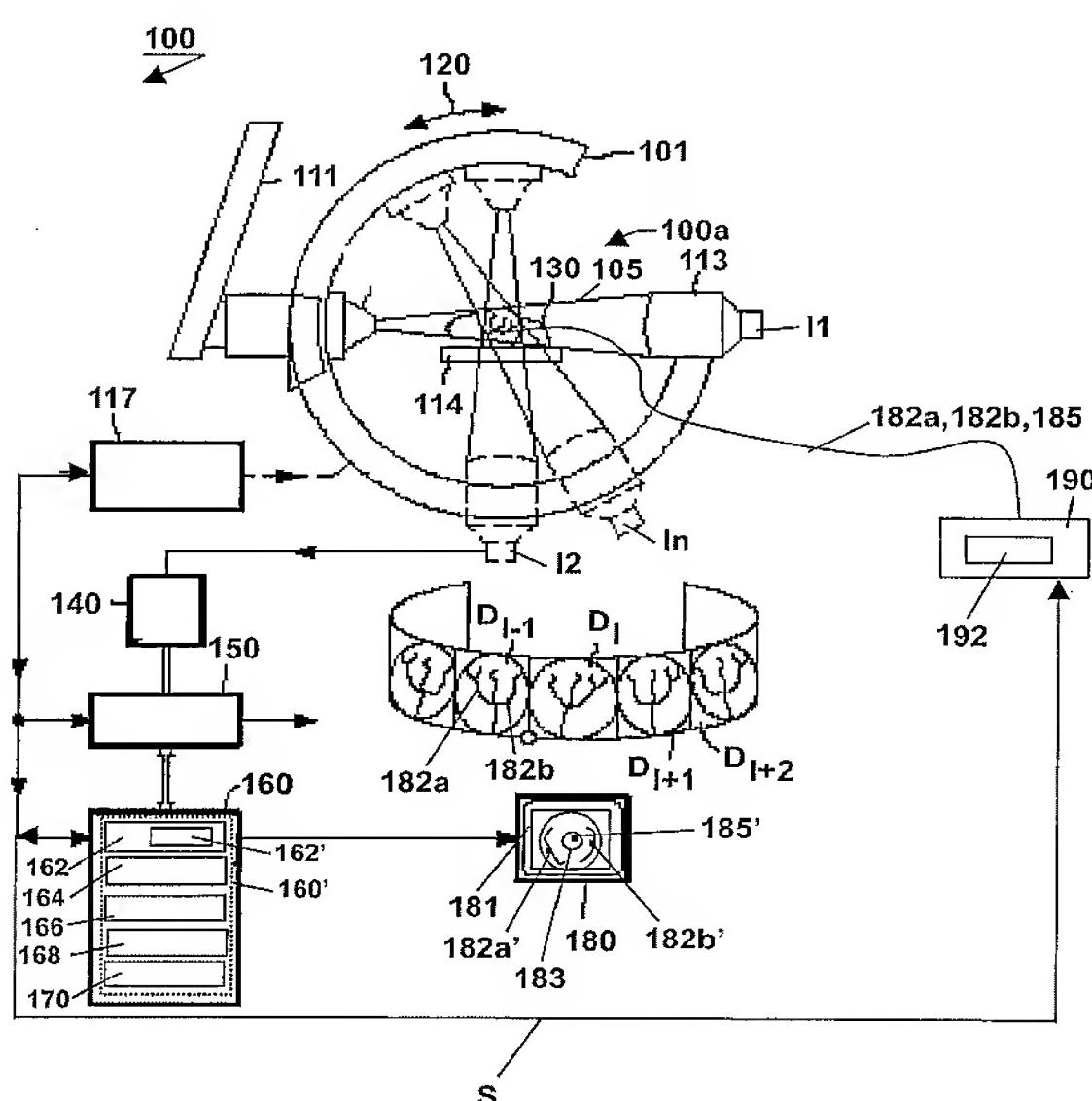
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**(54) Title:** A METHOD, A SYSTEM FOR GENERATING A SPATIAL ROADMAP FOR AN INTERVENTIONAL DEVICE AND A QUALITY CONTROL SYSTEM FOR GUARDING THE SPATIAL ACCURACY THEREOF

**(57) Abstract:** The invention relates to a method, a system for generating a spatial roadmap for an interventional device and a quality control system for guarding the spatial accuracy thereof. In an embodiment of the system 100 for practicing the invention an X-ray imager 100a is used for acquiring suitable images  $D_I$ ,  $D_i$ , ...,  $D_N$ , showing the volume under examination, comprising the catheters 182a, 182b. These X-ray images are then processed by means of per se known reconstruction method to yield a motion-corrected three-dimensional volume of examination. This volume is then presented by means of suitable user-interface 181 on a display unit 183 together with distal portions of the catheters 182a, 182b provided with detectable markers (for simplicity only one detectable marker per catheter is shown). The motion-corrected three-dimensional image of the target organ 184 is used to construct the motion-corrected target organ-oriented three-dimensional coordinate system which is then used for drawing the spatial roadmap 183 and which is also used to locate a spatial position of a displaceable catheter 185, provided with a further detectable marker 185'. These computations are carried out using computing means 160. The computing means 160 can be further arranged to carry out a further computation comprising a computation of a spatial discrepancy between the envisaged spatial roadmap



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183 and the position of the displaceable catheter 185'. In case a substantial discrepancy is signalled and in case the catheters are positioned within the target organ by means of a controllable navigation system 190, the computing means calculates a control signal S to be applied to the navigation system 190 to correct for the mismatch between the spatial roadmap 183 and the position of the displaceable catheter 185. The control unit then applies a correction signal S to the navigation system 190 after which an interventional procedure carries on.



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